

## REMARKS

A Non-Final Office Action dated 7 July 2004 rejected all of the pending claims, the original Claims 1 through 26 as obvious in light of two U.S. Patents, Ward, et al. (U.S. Patent 6,282,417) and Hogg, et al. (U.S. Patent 6,430,412). Specifically, the Office Action rejected Claims 1-4, 6-15, 17, 21, and 22 as obvious in light of Ward in the light of Hogg. The Office Action rejected Claims 5, 16, 18, 19, 20, and 23-26 in the further light of Kocin et al. (U.S. Patent 6,721,559). Additionally, the Office Action rejected the original title of the Application as non-descriptive as it fails to describe the nature of the invention.

### Objection to the Title

Applicant has amended the title to that suggested by the Examiner in the Office Action. Applicant concurs that the suggested title is a more succinct description of the invention taught in the application. The amendment remedies the objection to the title.

### Rejection of claims under 35 U.S.C. § 103

The Office Action has rejected the independent claims as obvious given Ward in the light of Hogg. Applicant respectfully traverses this rejection. The Applicant respectfully asserts that Ward does not contain a key limitation for enablement of the instant invention. The key limitation not present in Ward is a definition of a service volume that is distinct from an ATC sector. Ward relies upon the ATC sector.

ATC sector has a known meaning in the art. Air Traffic Control (ATC) providers often subdivide the volume of air that the ATC provider controls or ATC unit into sub-divisions. Dividing is done to distribute the workload between different controller teams within the jurisdiction of the ATC provider according to the relevant law. The sub-divisions are called ATC Sectors. A small ATC unit may only need a single sector — larger units may need tens of sectors. Ward reflects that specific meaning in the glossary by which Ward chose to be his own lexicographer at Column 1, Lines 41 through 50:

ATC sector--AIR TRAFFIC CONTROL SECTOR

An airspace area of defined horizontal and vertical dimensions for which a controller or group of controllers has air traffic control responsibility, normally within an air route traffic control center or an approach control facility. Sectors are established based on predominant traffic flows, altitude strata, and controller workload. Pilot-communications during operations within a sector are normally maintained on discrete frequencies assigned to the sector.

The ATC sector is defined in response to the controller-staffing needs. On the other hand, the application defines the regions and areas taught in the application in terms of reception rather than staffing. The application provides a definition distinct from that of an ATC sector at the Paragraph 0014 of the published application (Page 3, Lines 16-26) includes a definition of a service volume:

The region, or service volume, may comprise a projection on to a flat map or may optionally be defined as including a height above ground dimension. Regions need not be rectangular in shape. To further improve the granularity in the definition of these regions, each region may comprise one or more areas. Areas are subsets of the region which are bounded by top and bottom latitude lines and left and right longitude lines. In one embodiment of the invention, when viewed on a traditional flat map, each area would appear as a rectangle. The areas that comprise a particular region do not necessarily have to be contiguous. Different regions are allowed to overlap each other, just as coverage of different service providers overlap.

That this distinction between an ATC sector and a service volume is a taught limitation in the current specification is borne out throughout the teaching. One such example within the specification is included in the Summary of Invention at paragraph 0006 (Page 2):

[0006] According to another aspect of the present invention, the database defines the boundaries of various regions of the world, further subdivided into a collection of smaller areas. The present invention therefore allows a finer granularity for region definition than the simple longitude/latitude coordinate definition of the prior art and additionally permits use of nonrectangular regions.

Ward is based upon the ATC sector and allows only the granularity of the ATC sectors which are not selected for reception within the sector but rather based upon the team used to control the space the sector contains. The present invention, as taught in the specification, allows for the selection of areas to tile a region at a suitable granularity to allow for optimum communicative performance in each area within the region.

A virtue of the solution taught by the instant application is that the areas as taught are particularly amenable to the vagaries of topography found in a region. For example, across a particularly mountainous region, reception shadows may exist in the radio shadow of mountains such as, for example, Mount Rainier which intrudes 14,411 feet into the airspace may well occlude reception especially from the “line of sight” frequencies from any point transmission source in proximity to the mountain. By dividing the region into small areas within the ATC sector, the reception possible from the point transmission source at each of the areas defined within the ATC sector will determine the primacy in order of frequency and point transmission source to be used for ATC communications. In such a situation, at a point in the ATC sector within a shadow of Mount Rainier relative to a transmitter A, the transmitter would not be selected by the inventive device because of the known receptivity characteristics stored in association with the area in the database. Knowing the receptivity in the area, the invention will select only the frequencies receivable within the area and will rank them according to their effectiveness in the area.

The Office action relies upon Ward to teach the definition of service volume at Paragraph 2, “Ward discloses identifying current service volume (see col.8 lines 35-67).” In the cited lines in column 8, however, Ward teaches a reliance upon the known divisions of the ATC unit bounded by designated longitude lines, latitude lines, and altitudes,

Nothing in the Office Action suggests that the purpose for combining Hogg with Ward was to include a teaching of greater granularity than allowed by ATC sector selection.

Thus, in the independent claims, Claims 1, 9, 13, and 17, the teaching is specifically limited to a “service volume” and nowhere recites the limitation of an ATC sector nor is there anything in the specification that suggests a correlation between an ATC sector and the areas taught in the instant application. The definition of areas of suitable granularity based upon vagaries of reception within the defined area. Without suggesting that it is the only inventive limitation in the claims, the inclusion of the limitation of “service volume” as defined in the instant application is not suggested nor taught in either Ward or the combination of Ward with Hogg or further with Kocin.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

"All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Because none of the independent claims, Claims 1, 9, 13, and 17, are obvious in light of the combination of Ward and Hogg, neither are the dependent claims, Claims 2-4, 6-8, 10-15, 21, and 22. Similarly, neither are the dependent claims, Claims 5, 16, 18, 19, 20, and 23-26 in the further light of Kocin. For these reasons, the Applicant asserts that issuance of a Notice of Allowability is appropriate at this procedural posture.

Additionally, a typographic error was corrected in Claim 26. Prior to amendment Claim 26, misidentified the independent claim as Claim 7 rather than Claim 17 as now amended. This additional correction in light of the argument set forth above, renders Claim 26 allowable in its current amended state.

#### CONCLUSION

For the reasons set forth above, the Claims now stand in a condition for allowance. The inventive novelty comprises the significant and patentable distinction contained in the limitation "service volume."

Should the arguments or assertions set forth in this Office Action evoke questions or concerns of the Examiner, the Applicant request that the Examiner contact the undersigned attorney of record.

Respectfully submitted,

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#### MAIL CERTIFICATE

I hereby certify that this communication is being deposited with the United States Postal Service via first class mail under 37 C.F.R. § 1.08 on the date indicated below addressed to: MAIL STOP AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

3/11/05  
Date of Deposit



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